

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-107303-1

TestAmerica Sample Delivery Group: DN0336

Client Project/Site: W18-003

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600, MS H8-41

Richland, Washington 99352

Attn: Mr. Scot Fitzgerald



Authorized for release by:

4/11/2018 6:10:04 PM

Darlene Bandy, Project Manager I

(303)736-0100

darlene.bandy@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

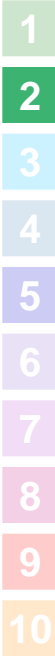


Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	5
Definitions	11
Method Summary	12
Sample Summary	13
Client Sample Results	14
QC Sample Results	15
QC Association	18

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Job ID: 280-107303-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: CH2M Hill Plateau Remediation Company

Project: W18-003

Report Number: 280-107303-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

The laboratory is not able to achieve project specified Highest Allowable Practical Quantitation Limits (HAPQL limits) for Total Organic Halides 9020B. All analytes met statistical limits, unless otherwise detailed in the individual sections below. As instructed by the client, the data is reported.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 3/13/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

ALKALINITY

Samples B3HLP2 (280-107303-5) and B3HKB38 (280-107303-6) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 03/16/2018 and 03/20/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC HALIDES

Samples B3HKC1 (280-107303-1), B3HKB9 (280-107303-2), B3HL97 (280-107303-3) and B3HKC0 (280-107303-4) were analyzed for total organic halides in accordance with EPA SW846 Method 9020B. The samples were analyzed on 03/26/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Samples B3HKC1 (280-107303-1), B3HKB9 (280-107303-2), B3HL97 (280-107303-3) and B3HKC0 (280-107303-4) were analyzed for total organic carbon in accordance with EPA SW-846 Method 9060A. The samples were analyzed on 04/04/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Job ID: 280-107303-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

Reviewed and approved:

Darlene Bandy
Project Manager

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 280-107303-1

SDG Number: DN0336

Login Number: 107303

List Number: 1

Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	60 CPM
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company	<div style="font-size: 2em; font-weight: bold; margin-bottom: 10px;">50165</div> CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-003-252
Page 1 of 2		

Collector: Kathy Turner /CHPRC DN0336	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650
SAF No.: W18-003	Sampling Origin: Hanford Site	Purchase Order/Charge Code: 300071
Project Title: RCRA, MARCH 2018	Logbook No.: HNF-N-506 - 97-72	Ice Chest No.: GWS-601
Shipped To (Lab): TestAmerica Denver	Method of Shipment: Commercial Carrier	Bill of Lading/Air Bill No.: 7800 0233 8809
Protocol: RCRA	Priority: 30 Days	Offsite Property No.: 9148

POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1	SPECIAL INSTRUCTIONS N/A 1.1 IR#8-0.1 Transfer RP 3-13-18
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Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKC1	N	W	MAR 12 2018	003	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HKC1	N	W			1x250-mL aG	9060_TOX: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HKB9	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HKB9	N	W			1x250-mL aG	9060_TOX: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HL97	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HL97	N	W			1x250-mL aG	9060_TOX: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HKC0	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C

Relinquished By: Kathy Turner /CHPRC MAR 12 2018 1020 Print First and Last Name Signature Date/Time	Received By: Troy Bacon /CHPRC MAR 12 2018 1020 Print First and Last Name Signature Date/Time	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By: Troy Bacon /CHPRC MAR 12 2018 1420 Print First and Last Name Signature Date/Time	Received By: FEDEX Print First and Last Name Signature Date/Time	
Relinquished By: FedEx Print First and Last Name Signature Date/Time	Received By: Reed Pottruff 3-13-18 0950 Print First and Last Name Signature Date/Time	
Relinquished By: Print First and Last Name Signature Date/Time	Received By: Print First and Last Name Signature Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:
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Page 6 of 18

60118 4/17/2018

04/12/2018

REV.0



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C.# W18-003-252		
						Page 2 of 2		
Collector: Kathy Turner JCHPRC DN0336		Contact/Requester: Karen Waters-Husted		Telephone No.: 509-376-4650				
SAF No.: W18-003		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: RCRA, MARCH 2018		Logbook No.: HNF-N-506-97-72		Ice Chest No.: GWS-601				
Shipped To (Lab): TestAmerica Denver		Method of Shipment: Commercial Carrier		Bill of Lading/Air Bill No.: 7800 0233 8809				
Protocol: RCRA		Priority: 30 Days		Offsite Property No.: 9148				
POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1				SPECIAL INSTRUCTIONS N/A				
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKC0	N	W	MAR 12 2018	1003	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C

Relinquished By: Kathy Turner JCHPRC Print First and Last Name Signature Date/Time			Received By: Troy Bacon CHPRC Print First and Last Name Signature Date/Time			Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other		
Relinquished By: Troy Bacon CHPRC Print First and Last Name Signature Date/Time			Received By: FEDEX Print First and Last Name Signature Date/Time					
Relinquished By: FedEx Print First and Last Name Signature Date/Time			Received By: Reed Pottruff Print First and Last Name Signature Date/Time					
Relinquished By: _____ Print First and Last Name Signature Date/Time			Received By: _____ Print First and Last Name Signature Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process):				Disposed By:		Date/Time:

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # W18-003-256		
						Page 1 of 1		
Collector: Juan Aguilar CHPRC DW0336		Contact/Requester: Karen Waters-Husted		Telephone No.: 509-376-4650				
SAF No.: W18-003		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071				
Project Title: RCRA, MARCH 2018		Logbook No.: HNF-N-506-98/55		Ice Chest No.: GWS-601				
Shipped To (Lab): TestAmerica Denver		Method of Shipment Commercial Carrier		Bill of Lading/Air Bill No.: 178000233880				
Protocol RCRA		Priority: 30 Days		Offsite Property No.: 9148				
POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1				SPECIAL INSTRUCTIONS N/A				
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HLP2	N	W	3-12-18	0905	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Page 8 of 18

04/12/2018

Relinquished By: Juan Aguilar CHPRC MAR 12 2018 1100		Received By: SSU #1 MAR 12 2018 1100		Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other					
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time							
Relinquished By: SSU #1 MAR 12 2018 1112		Received By: Frank Hall CHPRC MAR 12 2018 1112							
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time							
Relinquished By: Frank Hall CHPRC MAR 12 2018 1400		Received By: FEDEX							
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time							
Relinquished By: FedEx		Received By: Red Volant 3-13-18 0950							
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process):				Disposed By:		Date/Time:	

8 of 18
4/11/2018

REV.0

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # W18-003-223	
						Page 1 of 1	
Collector: Roger Friesz Jr. /CHPRC DND336		Contact/Requester: Karen Waters-Husted		Telephone No.: 509-376-4650			
SAF No.: W18-003		Sampling Origin: Hanford Site		Purchase Order/Charge Code: 300071			
Project Title: RCRA, MARCH 2018		Logbook No.: HNF-N-506 -99/14		Ice Chest No.: 6WS-601			
Shipped To (Lab): TestAmerica Denver		Method of Shipment Commercial Carrier		Bill of Lading/Air Bill No.: 7800 0233 8869			
Protocol RCRA		Priority: 30 Days		Offsite Property No.: 9148			
POSSIBLE SAMPLE HAZARDS/REMARK ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1				SPECIAL INSTRUCTIONS N/A			
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time
B3HK38	N	W	3-12-18	1102	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days
						Preservative	Cool <=6C

Relinquished By: Roger Friesz Jr. /CHPRC MAR 12 2018 1155		Received By: Janelle Zunker CHPRC MAR 12 2018 1150		Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other	
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time			
Relinquished By: Janelle Zunker CHPRC MAR 12 2018 1400		Received By: FEDEX			
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time			
Relinquished By: FedEx		Received By: Reed Pottoruff 3-13-18 0950			
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time			
Relinquished By:		Received By:			
Print First and Last Name Signature Date/Time		Print First and Last Name Signature Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):			Disposed By:	Date/Time:

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Ship date:

Mon 3/12/2018

Actual delivery:

Tue 3/13/2018 9:41 am

Richland, WA US

Delivered

ARVADA, CO US

Signed for by: B.BURTNESS

Travel History

Date/Time	Activity	Location
3/13/2018 - Tuesday		
9:41 am	Delivered	ARVADA, CO
9:09 am	On FedEx vehicle for delivery	ARVADA, CO
7:36 am	At local FedEx facility	ARVADA, CO
5:23 am	At destination sort facility	DENVER, CO
4:11 am	Departed FedEx location	MEMPHIS, TN
12:08 am	Arrived at FedEx location	MEMPHIS, TN
3/12/2018 - Monday		
4:49 pm	Left FedEx origin facility	PASCO, WA
3:15 pm	Picked up	PASCO, WA
2:04 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	780002338869	Service	FedEx Priority Overnight
Weight	50 lbs / 22.68 kgs	Signature services	Direct signature required
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	50 lbs / 22.68 kgs	Terms	Third Party
Shipper reference	9148	Packaging	Your Packaging
Special handling section	Deliver Weekday, Direct Signature Required	Standard transit	3/13/2018 by 10:30 am

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Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Qualifiers

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Method	Method Description	Protocol	Laboratory
9020B	Organic Halides, Total (TOX)	SW846	TAL DEN
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-107303-1	B3HKC1	Water	03/12/18 10:03	03/13/18 09:50
280-107303-2	B3HKB9	Water	03/12/18 10:03	03/13/18 09:50
280-107303-3	B3HL97	Water	03/12/18 10:03	03/13/18 09:50
280-107303-4	B3HKC0	Water	03/12/18 10:03	03/13/18 09:50
280-107303-5	B3HLP2	Water	03/12/18 09:05	03/13/18 09:50
280-107303-6	B3HK38	Water	03/12/18 10:02	03/13/18 09:50

04/12/2018 Client Sample Results

REV.0

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

General Chemistry

Client Sample ID: B3HKC1
Date Collected: 03/12/18 10:03
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	8.6	B	30.0	7.7	ug/L			03/26/18 10:19	1
Total Organic Carbon - Average	223	B	1000	155	ug/L			04/04/18 13:23	1

Client Sample ID: B3HKB9
Date Collected: 03/12/18 10:03
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	9.5	B	30.0	7.7	ug/L			03/26/18 10:19	1
Total Organic Carbon - Average	202	B	1000	155	ug/L			04/04/18 14:14	1

Client Sample ID: B3HL97
Date Collected: 03/12/18 10:03
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	10.0	B	30.0	7.7	ug/L			03/26/18 10:19	1
Total Organic Carbon - Average	169	B	1000	155	ug/L			04/04/18 14:31	1

Client Sample ID: B3HKC0
Date Collected: 03/12/18 10:03
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	9.5	B	30.0	7.7	ug/L			03/26/18 10:19	1
Total Organic Carbon - Average	208	B	1000	155	ug/L			04/04/18 14:45	1

Client Sample ID: B3HLP2
Date Collected: 03/12/18 09:05
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	104000		5000	1070	ug/L			03/16/18 00:49	1

Client Sample ID: B3HK38
Date Collected: 03/12/18 10:02
Date Received: 03/13/18 09:50

Lab Sample ID: 280-107303-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	89900		5000	1070	ug/L			03/20/18 17:42	1

TestAmerica Denver

QC Sample Results

04/12/2018

REV.0

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 280-409179/2

Matrix: Water

Analysis Batch: 409179

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	7.7	U	30.0	7.7	ug/L	-		03/26/18 10:19	1

Lab Sample ID: LCS 280-409179/4

Matrix: Water

Analysis Batch: 409179

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Halogens - Dup	100	108.1		ug/L	-	108	80 - 120

Lab Sample ID: 280-107303-1 MS

Matrix: Water

Analysis Batch: 409179

Client Sample ID: B3HKC1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Halogens - Dup	8.6	B	100	109.2		ug/L	-	101	75 - 125

Lab Sample ID: 280-107303-1 MSD

Matrix: Water

Analysis Batch: 409179

Client Sample ID: B3HKC1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Halogens - Dup	8.6	B	100	110.3		ug/L	-	102	75 - 125	1	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-410309/5

Matrix: Water

Analysis Batch: 410309

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average	155	U	1000	155	ug/L	-		04/04/18 12:48	1

Lab Sample ID: LCS 280-410309/3

Matrix: Water

Analysis Batch: 410309

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	25000	24420		ug/L	-	98	80 - 120

Lab Sample ID: LCSD 280-410309/4

Matrix: Water

Analysis Batch: 410309

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	25000	24610		ug/L	-	98	80 - 120	1	20

TestAmerica Denver

QC Sample Results

04/12/2018

REV.0

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 280-107303-1 MS

Matrix: Water

Analysis Batch: 410309

Client Sample ID: B3HKC1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	223	B	25000	24450		ug/L		97	75 - 125

Lab Sample ID: 280-107303-1 MSD

Matrix: Water

Analysis Batch: 410309

Client Sample ID: B3HKC1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	223	B	25000	24310		ug/L		96	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-408183/6

Matrix: Water

Analysis Batch: 408183

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1070	U	5000	1070	ug/L			03/15/18 22:57	1

Lab Sample ID: LCS 280-408183/4

Matrix: Water

Analysis Batch: 408183

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	200000	218000		ug/L		109	80 - 120

Lab Sample ID: LCSD 280-408183/5

Matrix: Water

Analysis Batch: 408183

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	200000	217400		ug/L		109	80 - 120	0	20

Lab Sample ID: 280-107303-5 DU

Matrix: Water

Analysis Batch: 408183

Client Sample ID: B3HLP2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	104000		104100		ug/L		0.3	20

Lab Sample ID: MB 280-408520/5

Matrix: Water

Analysis Batch: 408520

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1070	U	5000	1070	ug/L			03/20/18 17:35	1

TestAmerica Denver

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCS 280-408520/4
Matrix: Water
Analysis Batch: 408520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	200000	187200		ug/L		94	80 - 120

Lab Sample ID: 280-107303-6 DU
Matrix: Water
Analysis Batch: 408520

Client Sample ID: B3HK38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	89900		89470		ug/L		0.5	20

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003

TestAmerica Job ID: 280-107303-1
SDG: DN0336

General Chemistry

Analysis Batch: 408183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107303-5	B3HLP2	Total/NA	Water	SM 2320B	
MB 280-408183/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-408183/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-408183/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-107303-5 DU	B3HLP2	Total/NA	Water	SM 2320B	

Analysis Batch: 408520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107303-6	B3HK38	Total/NA	Water	SM 2320B	
MB 280-408520/5	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-408520/4	Lab Control Sample	Total/NA	Water	SM 2320B	
280-107303-6 DU	B3HK38	Total/NA	Water	SM 2320B	

Analysis Batch: 409179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107303-1	B3HKC1	Total/NA	Water	9020B	
280-107303-2	B3HKB9	Total/NA	Water	9020B	
280-107303-3	B3HL97	Total/NA	Water	9020B	
280-107303-4	B3HKC0	Total/NA	Water	9020B	
MB 280-409179/2	Method Blank	Total/NA	Water	9020B	
LCS 280-409179/4	Lab Control Sample	Total/NA	Water	9020B	
280-107303-1 MS	B3HKC1	Total/NA	Water	9020B	
280-107303-1 MSD	B3HKC1	Total/NA	Water	9020B	

Analysis Batch: 410309

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107303-1	B3HKC1	Total/NA	Water	9060A	
280-107303-2	B3HKB9	Total/NA	Water	9060A	
280-107303-3	B3HL97	Total/NA	Water	9060A	
280-107303-4	B3HKC0	Total/NA	Water	9060A	
MB 280-410309/5	Method Blank	Total/NA	Water	9060A	
LCS 280-410309/3	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-410309/4	Lab Control Sample Dup	Total/NA	Water	9060A	
280-107303-1 MS	B3HKC1	Total/NA	Water	9060A	
280-107303-1 MSD	B3HKC1	Total/NA	Water	9060A	